

FISHING & RESEARCH



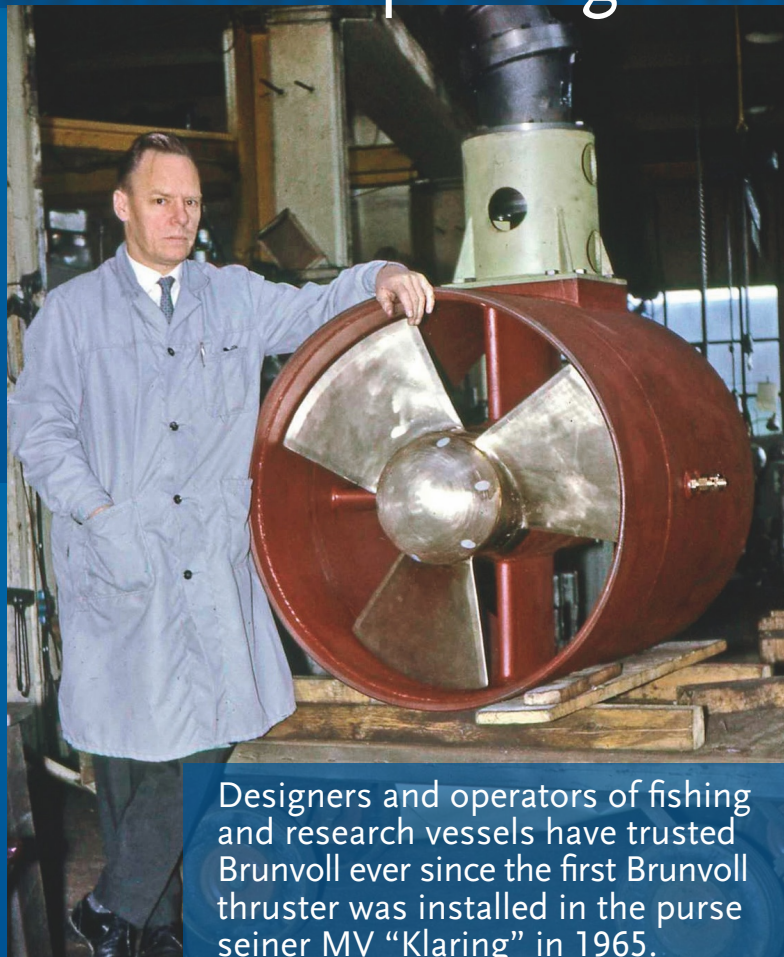
Trusted by
the most demanding
Fishermen and
Researchers



THE

The first Brunvoll thruster – in 1965

This friendship has grown ever since –



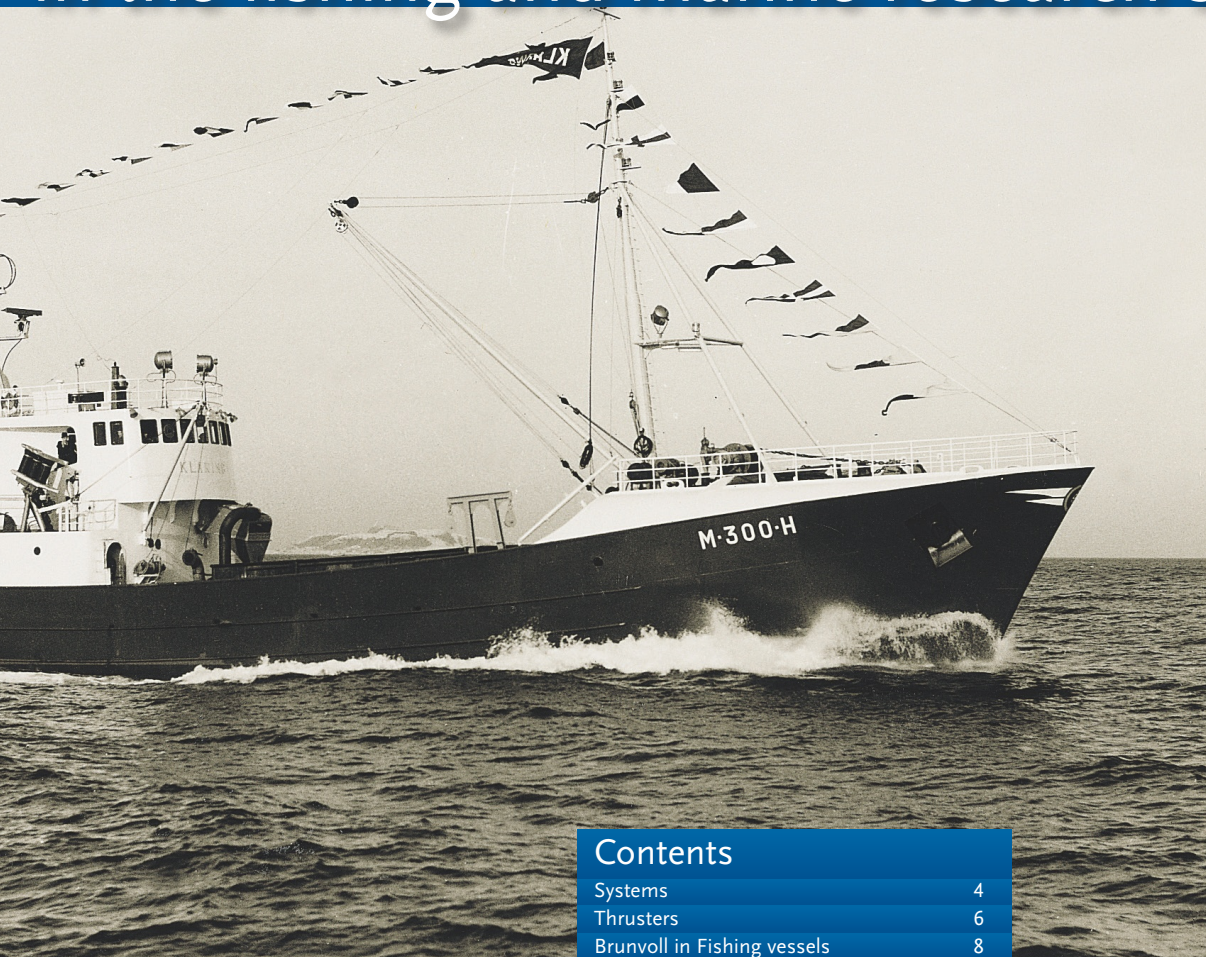
Designers and operators of fishing and research vessels have trusted Brunvoll ever since the first Brunvoll thruster was installed in the purse seiner MV “Klaring” in 1965.



FIRST

rapidly became the fisherman's friend!

in the fishing and marine research sectors

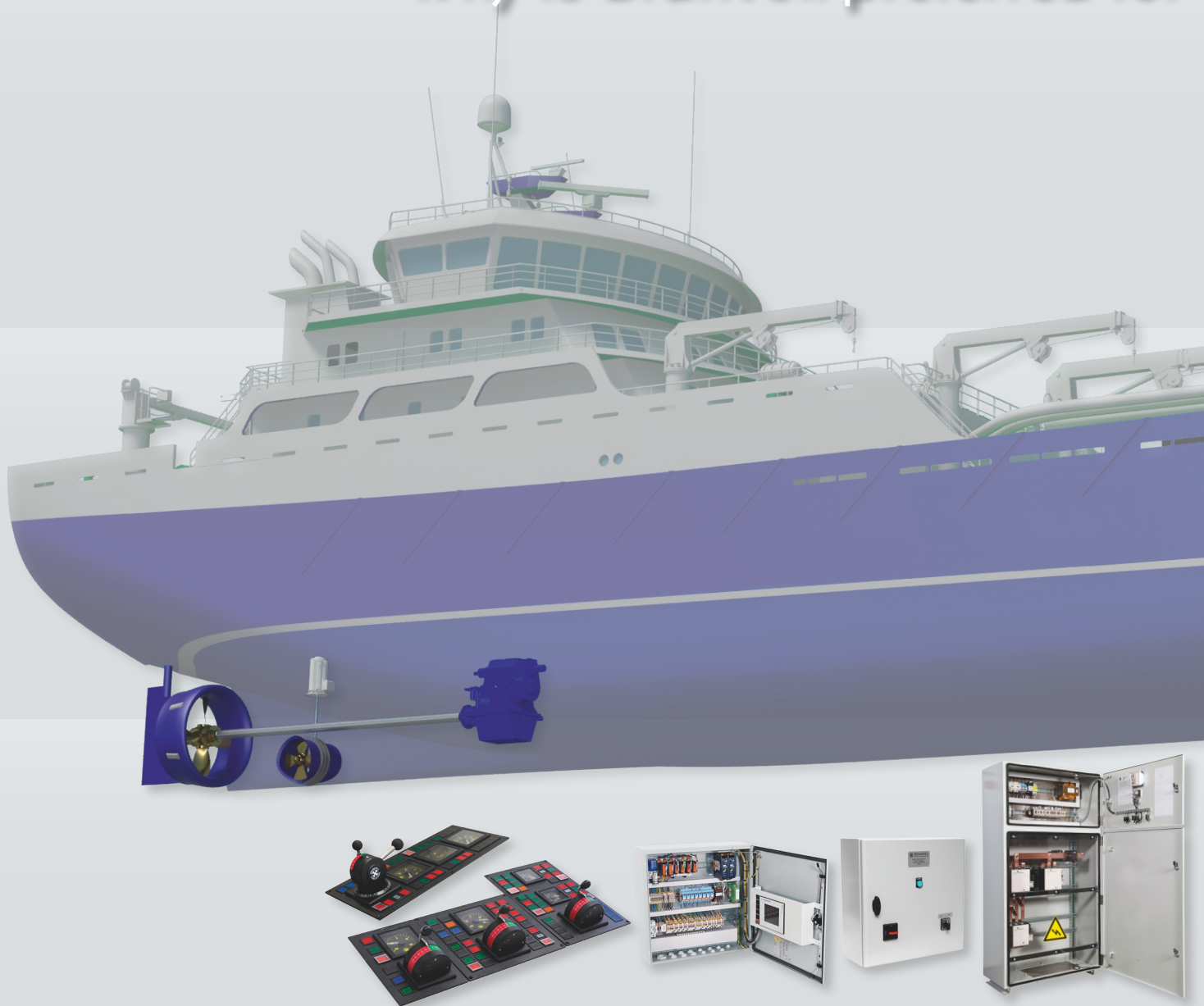


Contents

Systems	4
Thrusters	6
Brunvoll in Fishing vessels	8
“Gitte Henning”	10
“M. Ytterstad”	12
“Christina E”	14
Next-generation Aker Seafoods trawlers	16
5 trawlers designed by Skipsteknisk	18
The latest “Leinebjørn”	20
“Inger Hildur” – years of success	22
Brunvoll in any conditions	24
“Geir II” – an innovative longliner	28
Brunvoll in Live Fish Carriers	30
Brunvoll in Research vessels	32
“G.O. Sars” – a research milestone	34
“James Cook” – a new milestone	36
Ifremer with Brunvoll thrusters	38
“Nordsøen” and “Janan”	40
Brunvoll in any kind of Research vessel	42

SYST

Why is Brunvoll preferred for



Renowned and reliable

Thrusters are becoming more and more important for fishing and research vessels. Since 1965, Brunvoll has been developing innovative thrusters for more effective manoeuvring.

Brunvoll offers access to expertise and flexibility for creating optimal thruster solutions. Benefits include precise manoeuvring in harbours as well as efficiently securing the catch in challenging and vulnerable environments.

Our unique expertise is valued in advanced fishing, research, and multipurpose vessels.

Complete thruster systems from a single-source supplier

Brunvoll offers a consistent range from 100 kW to 3,500 kW – including tunnel thrusters, LowNoise thrusters, retractable azimuth thrusters, combined retractable azimuth/tunnel thrusters and rim-driven thrusters (RDTs).

Brunvoll provides fully integrated thruster solutions complete with drive, control, alarm and monitoring systems, electronic cabinets, and hydraulic power units.

EMS

advanced Fishing and Research vessels?



BruCon from Bridge to Blade

BruCon is Brunvoll's modular control, monitoring and alarm system for manoeuvring, positioning and propulsion – enabling:

- Precise control of manoeuvring, positioning and propulsion
- Optimized performance
- Reduced wear
- Smarter preventive maintenance
- Reliable service
- Access to Brunvoll support 24/7

Lifetime service and support

- Our streamlined organization focuses on thruster systems only.
- All our thruster systems are Brunvoll design – our service personnel know them inside out.
- Brunvoll's experienced teams of in-house service engineers have multidisciplinary skills.
- Fast and knowledgeable response to service calls is available 24/7.
- For short delivery times, we keep extensive stocks of spare parts for all Brunvoll thrusters in service.

THRU

One consistent high-quality Brunvoll

Tunnel

Tunnel Thrusters from 100 to 3,500 kW

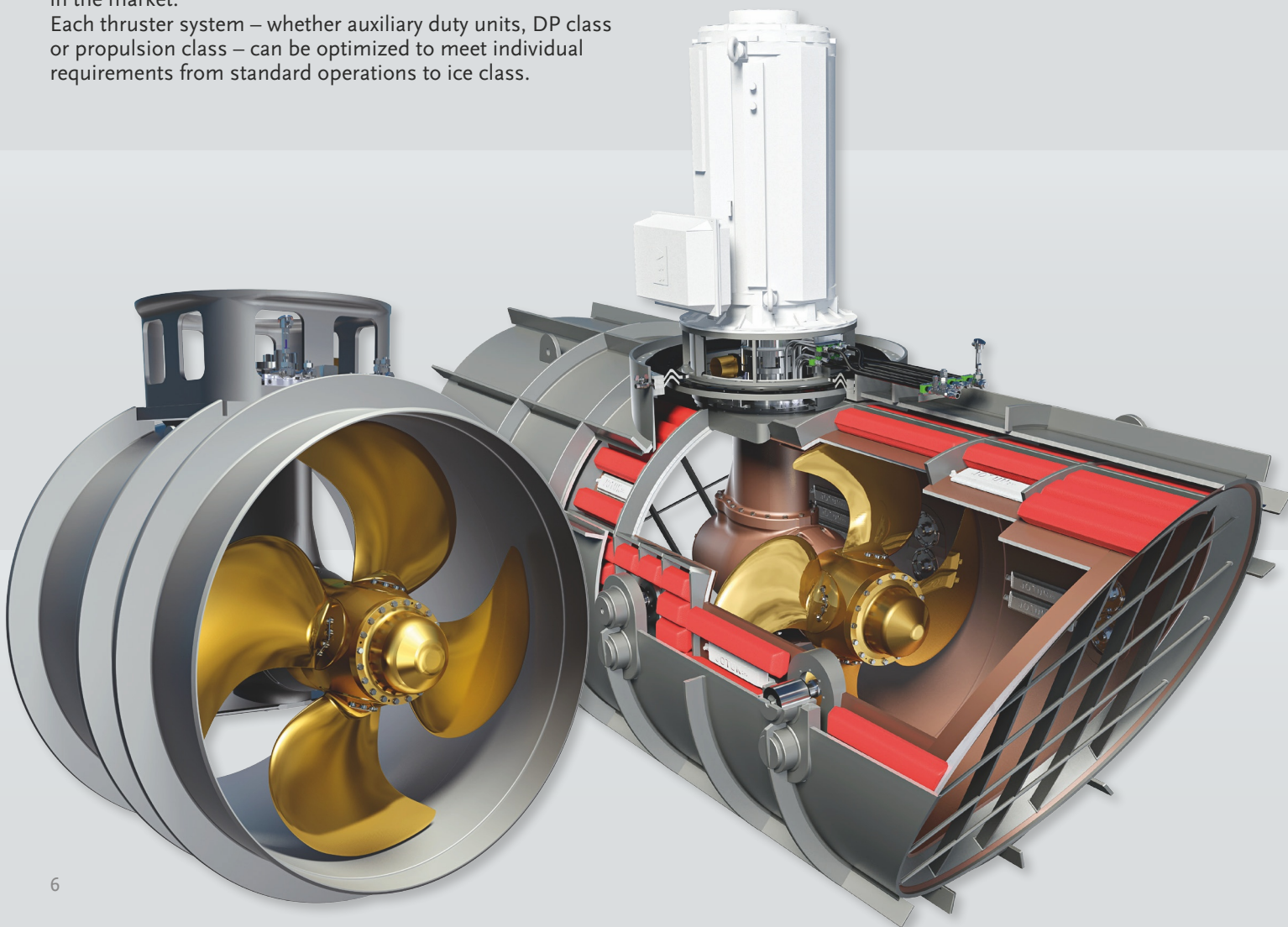
Brunvoll tunnel thrusters have been a success throughout the maritime sector. In the challenges presented by today's fishing industry, they have proved their reliability with many operating hours each year, including dynamic positioning. Our thrusters have undergone constant refinement since the first unit was delivered in 1965, and are now state of the art in the market.

Each thruster system – whether auxiliary duty units, DP class or propulsion class – can be optimized to meet individual requirements from standard operations to ice class.

Tunnel LowNoise

LowNoise Thrusters

... are valuable for vessels where noise must be minimal to achieve the best possible conditions for fishing and research. Low noise means comfort for personnel, increasing alertness and productivity. Brunvoll pioneered low-noise thrusters. We have improved this technology through four generations.



STEERS

range – rewarding in the long run

Retractable Azimuth

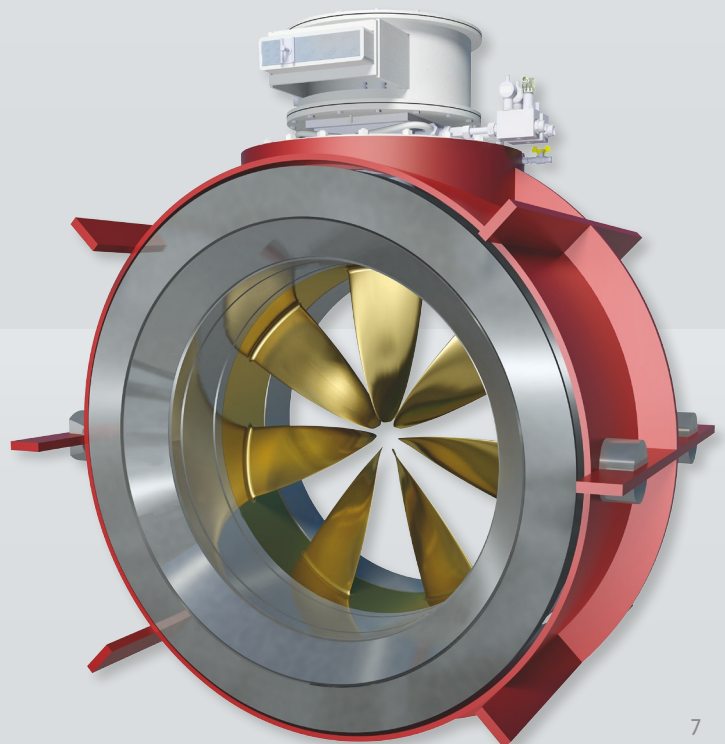
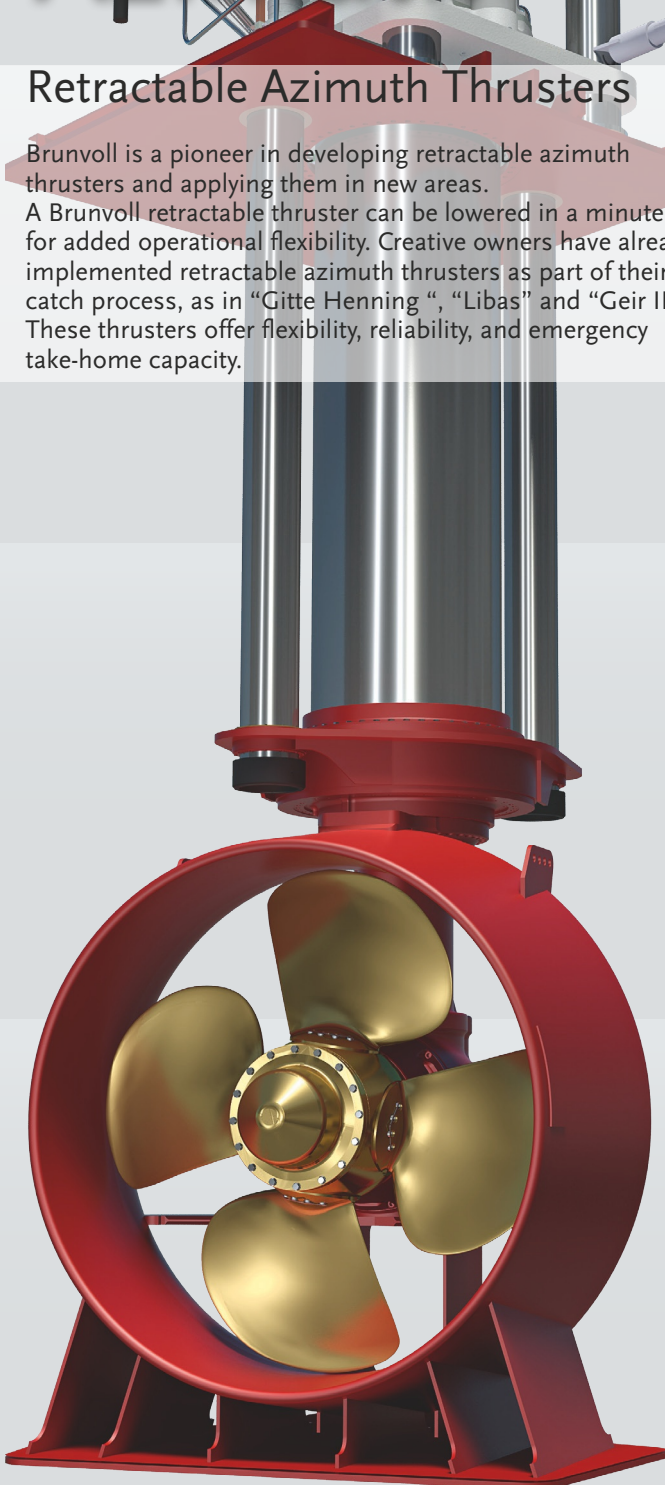
Retractable Azimuth Thrusters

Brunvoll is a pioneer in developing retractable azimuth thrusters and applying them in new areas. A Brunvoll retractable thruster can be lowered in a minute, for added operational flexibility. Creative owners have already implemented retractable azimuth thrusters as part of their catch process, as in “Gitte Henning”, “Libas” and “Geir II”. These thrusters offer flexibility, reliability, and emergency take-home capacity.

Rim Driven

RDT – Rim Driven Thrusters

... enable space-saving and flexible design along with quiet performance. The undisturbed water inflow to the propeller reduces noise and vibration, improving thruster efficiency. With the integrated electric motor, there is no need for shaft line, coupling or external electric motor. With no gears and bearings that need oil lubrication, RDTs reduce environmental risk.



FISH

Fishing vessels of Norwegian

Since Viking times, building robust fishing vessels has been a matter of survival in Norway. Centuries of expertise underpin the cluster of maritime innovation on Norway's West coast.

New potential for profitability

Today's fishing vessels are becoming more and more advanced with multi-purpose year-round capabilities – including patrol, support, rescue and salvage, oil recovery, dynamic positioning, and ROV operation. Brunvoll's expertise offers a gateway to optimal solutions and new opportunities. Extended functionality makes the most of your investment all year round.

Norway – innovative in marine skills and ship concepts

Washed by the world's wildest oceans, Norway has been driven to become the leader in fisheries and marine research. Barren landscapes have bred generations of seafarers who depended on these challenging waters for food. An attitude of innovation and superb workmanship has been hammered into a maritime tradition that dates back to Viking times.



ING

design are in the forefront

Brunvoll is a respected member of this cluster. We also work in close partnership with other topranking designers and yards in Scandinavia - and other parts of the world.

Brunvoll is at the hub

Brunvoll is inspired by the dynamic and innovative maritime cluster of Western Norway – and contributes to it. In a demanding environment of harsh seas and cost constraints, we are constantly pressured to come up with innovative and effective solutions.

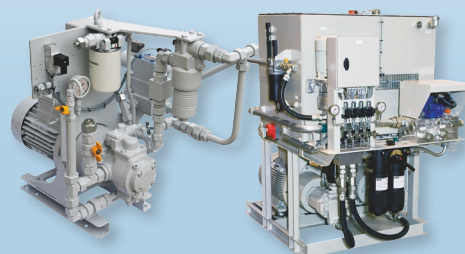
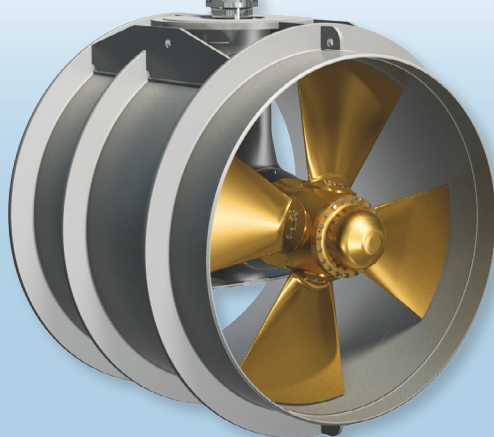
Brunvoll, No. 1 in Norway for 50 years

... with a strong position among advanced oceangoing fishing vessels in Denmark, the Faroe Islands, Iceland, Ireland, the Orkney Islands, Scotland, the Shetland Islands, and Sweden. Especially around the North Sea, Brunvoll is the major provider of thrusters for the most demanding fishing and research vessels. Brunvoll also has a strong position in the fishing sector in countries such as Chile and Russia.



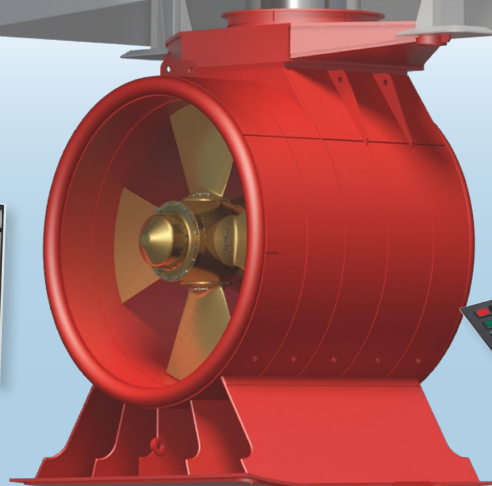
The new “Gitte Henning” is an example of the power, technology and quality required in modern fisheries

The highly advanced 86m trawler “Gitte Henning” will use a Retractable Azimuth Thruster as part of the super-efficient catch process. This vessel is designed to perform midwater trawling in the North Sea for pelagic fish such as mackerel, herring and blue whiting.

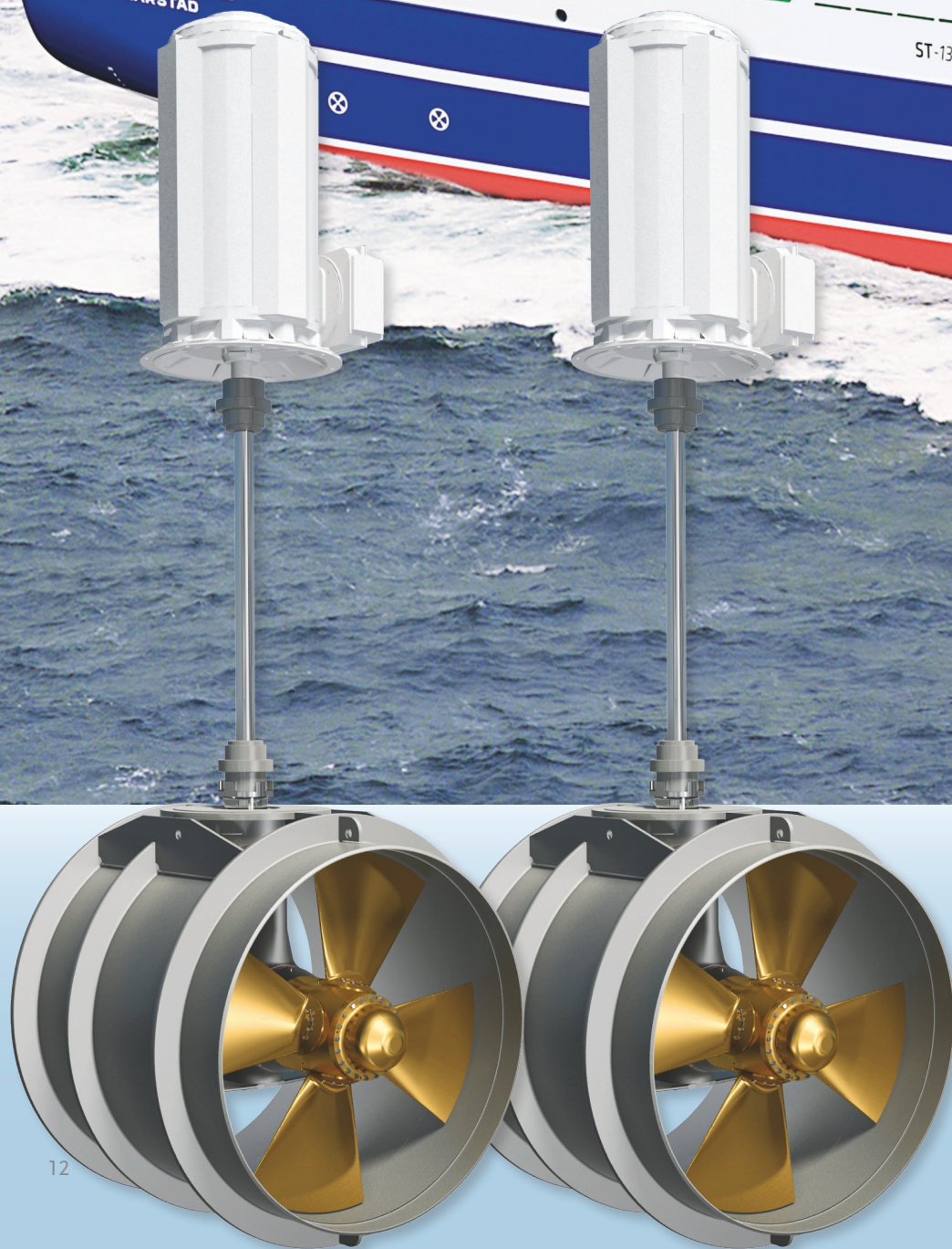




2013 "Gitte Henning"
Owner: Gitte Henning
Design: Wärtsilä Ship Design
Yard: Western Baltija Shipbuilding
Bow: Retractable Azimuth Combi
AR80 LTC 2100 1470 kW
Stern: FU63 LTC 1750 900 kW



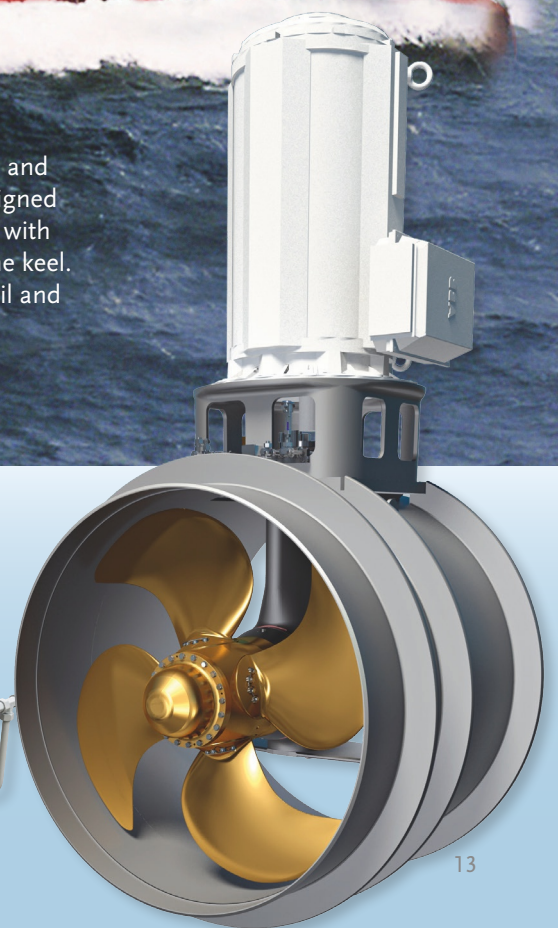
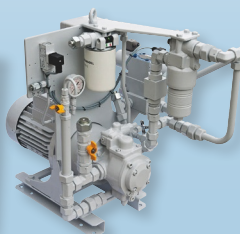
“M.Ytterstad” with three
Brunvoll thrusters





“M. Ytterstad” – Ytterstad’s new flagship, with purse seining and pelagic trawling as its main functions. The vessel is also designed for marine research in northern areas, with a drop keel fitted with instrumentation that can be lowered several metres below the keel. In addition, the ship can operate as a service vessel for the oil and gas industry in the Norwegian sea and the Barents Sea. The three Brunvoll thrusters play a key role in the advanced functionality and flexibility of “M. Ytterstad”.

2014 “M.Ytterstad”
 Owner: Kanstadford
 Design: Skipsteknisk ST-135 L
 Yard: Besiktas Shipyard
 Bow: FU63 LTC 1750 950 kW
 Stern: 2 x FU63 LTC 1550 600 kW



“Christina E” is a state-of-the-art fishing vessel for purse seining, trawling, research and oil recovery



2011 “Christina E”

Owner: Ervik & Sævik

Design: Wärtsilä Ship Design

Yard: Karstensens Skibsværft

Bow: FU74 tunnel thruster LTC 2000 1200/1425 kW

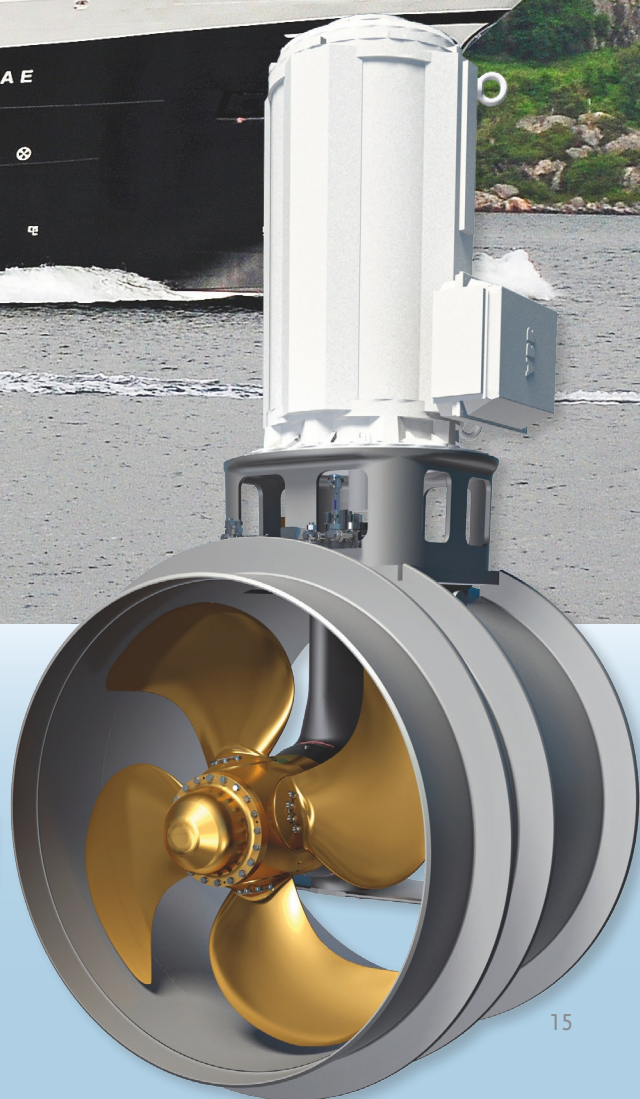
Stern: FU74 tunnel thruster LTC 2000 1200/1425 kW



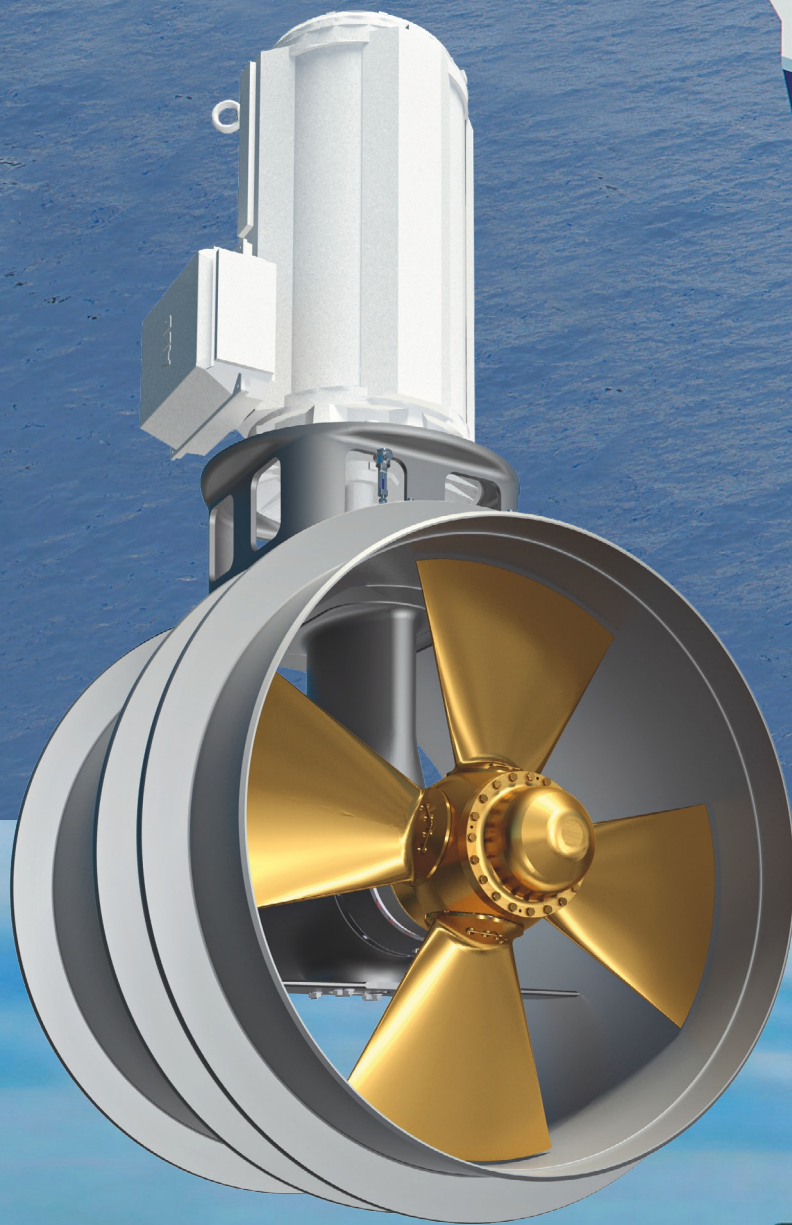
Built for multipurpose work “Christina E” can be used all year round. To maintain top quality of the fish, the integrated loading, cooling, and unloading system is designed for gentle handling.

The vessel is so efficient that her fish quota can be filled in 5-6 months. Her accommodation capacity allows flexible operation,

with 10-12 people on board for fishing activities and up to twice as many for research and offshore assignments. The vessel has an advanced hybrid propulsion system and a retractable keel with electronic equipment for marine research. “Christina E” has DP class and is equipped for dynamic positioning work on seabed installations. This ICE-C vessel was delivered in 2011.



3 next-generation trawlers from Vard to Aker Seafoods with Brunvoll Thruster System

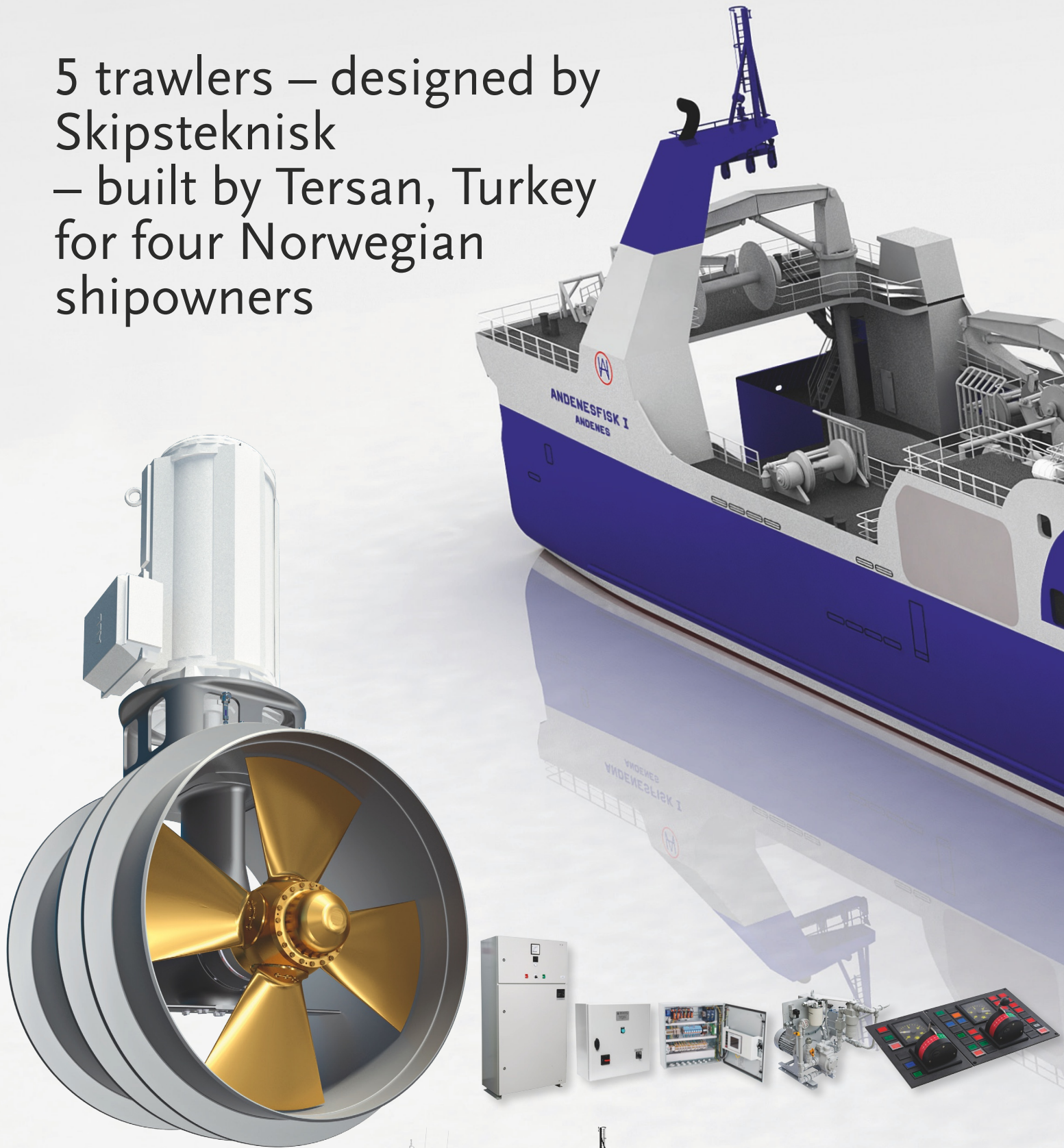


Owner: Aker Seafoods
Design: Vard 01
Yard: Vard
Bow: FU63 LTC 1550 600 kW





5 trawlers – designed by
Skipsteknisk
– built by Tersan, Turkey
for four Norwegian
shipowners



2013 "Havbryn"
2013 "Havstrand"
Owners: Havbryn and Havstrand
Design: ST 116 L
Yard: Tersan
Bow: FU45 LTC
1375 450 kW



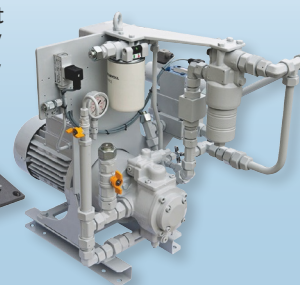


The latest “Leinebjørn”

The family-owned fishing company Leinebjørn AS has owned a “Leinebjørn” since 1901. The new M/S “Leinebjørn”, delivered in 2012, is a 67.5 m long purse seiner / trawler designed and built by Karstensens Skibsværft A/S, Skagen. The vessel can be used for fishing herring, capelin and blue whiting, among others.



2012 “Leinebjørn”
Owner: Leinebjørn
Design: Karstensens
Yard: Karstensens Skibsværft
Bow: FU63 LTC 1750 850 kW
Stern: FU63 LTC 1750 960 kW





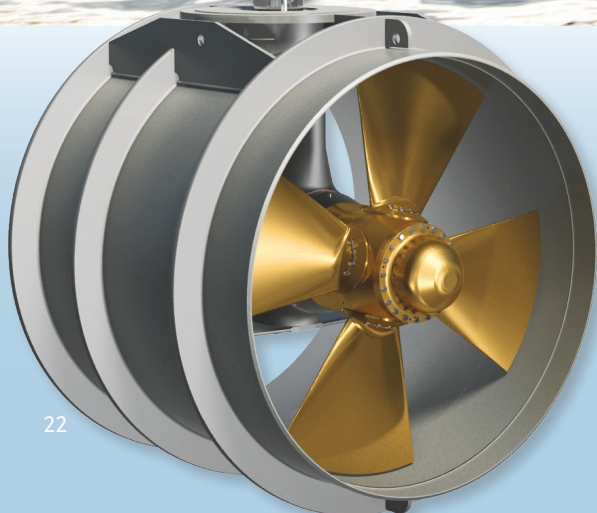
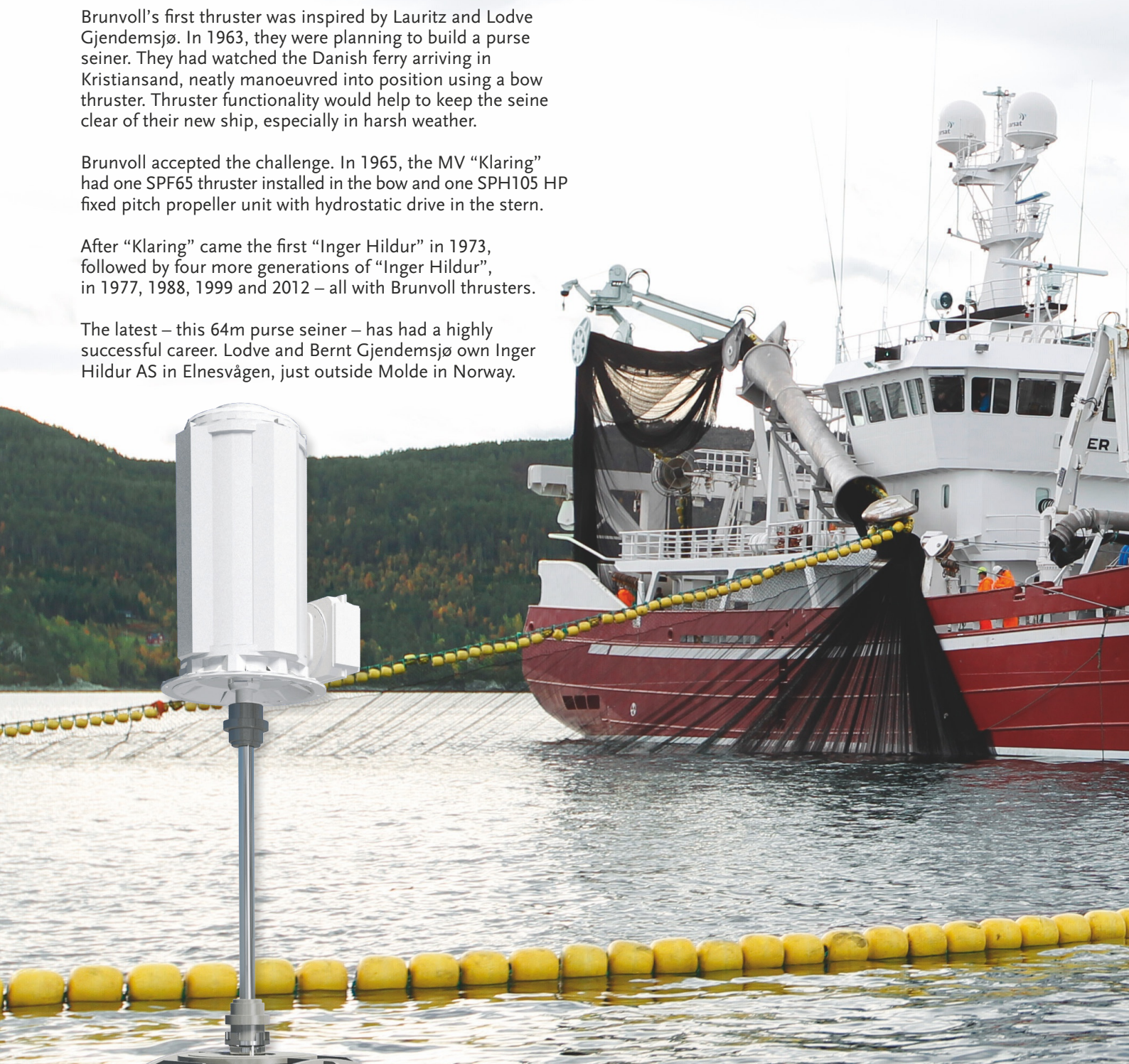
“Inger Hildur” – years of success

Brunvoll's first thruster was inspired by Lauritz and Lodve Gjendemsjø. In 1963, they were planning to build a purse seiner. They had watched the Danish ferry arriving in Kristiansand, neatly manoeuvred into position using a bow thruster. Thruster functionality would help to keep the seine clear of their new ship, especially in harsh weather.

Brunvoll accepted the challenge. In 1965, the MV “Klaring” had one SPF65 thruster installed in the bow and one SPH105 HP fixed pitch propeller unit with hydrostatic drive in the stern.

After “Klaring” came the first “Inger Hildur” in 1973, followed by four more generations of “Inger Hildur”, in 1977, 1988, 1999 and 2012 – all with Brunvoll thrusters.

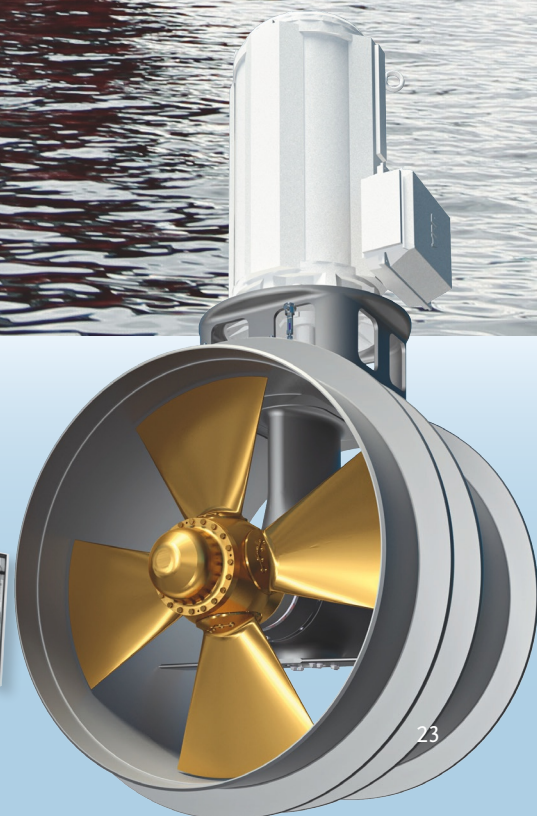
The latest – this 64m purse seiner – has had a highly successful career. Lodve and Bernt Gjendemsjø own Inger Hildur AS in Elnesvågen, just outside Molde in Norway.



Lodve Gjendemsjø is delighted with the performance of the Brunvoll thrusters installed on the fifth “Inger Hildur”



2001 "Inger Hildur"
 Owner: Inger Hildur
 Yard: Larsnes Mekaniske Verksted
 Bow: FU63 LTC 1750 700 kW
 Stern: FU63 LTC 1750 588 kW



Rough or smooth sailing at sea, catch or port



2012 "Fugloyhav"

2008 "Hepsøhav"



2004 "Altair"



2013 "Straumberg"



2008 "Lunar Bow"



2000 "Annelies Ilona" ex "Atlantic Dawn"



2013 "Astrid"



– fishermen trust Brunvoll in any conditions



2004 "Libas"



2007 "Brennholm"



2006 "Sjøglans"



2003 "Finnur Friði"



2002 "Cetus"



2014 "Sulahav"



2014 "Vestervon"

2012 "Havsnurp"
 Owner: Havsnurp
 Design: Karstensens
 Yard: Karstensens Skibsværft
 Bow: FU 63 LTC 1550 700 kW
 Stern: FU 63 LTC 1550 700 kW



2012 "Liafjord"
 Owner: Liegruppen
 Design: Wärtsilä Ship Design VS6106
 Yard: Eidsvik Skibsbyggeri
 Bow: FU 63 LTC 1550 800 kW
 Stern: FU 63 LTC 1550 800 kW



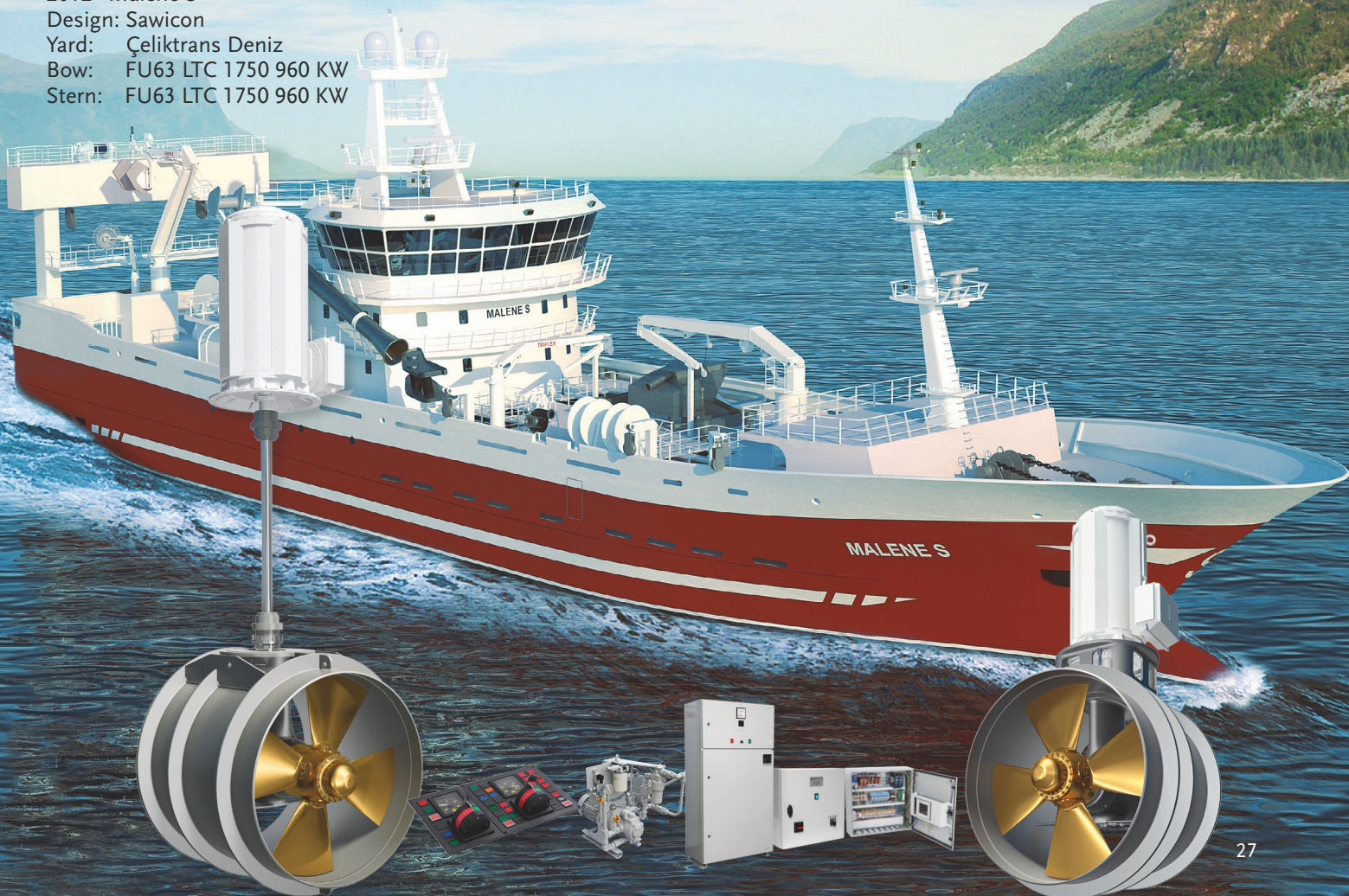
2011 "Artus"
 Design: Havyard Design
 Yard: Havyard AS
 Bow: FU45 LTC 1225 368 kW
 Stern: FU45 LTC 1225 368 kW



2012 "Einar Erlend"
 Design: Solstrand Trading
 Yard: Vestværfet
 Bow: FU 37 LTC 1000 147 kW
 Stern: FU 37 LTC 1000 221 kW



2012 "Malene S"
 Design: Sawicon
 Yard: Çeliktrans Deniz
 Bow: FU63 LTC 1750 960 KW
 Stern: FU63 LTC 1750 960 KW



“Geir II” – an innovative longliner design with Brunvoll Thruster System



“Geir II” is designed by Skipsteknisk for operation in severe weather conditions, with high manoeuvrability and station-keeping capabilities. Brunvoll thruster expertise contributed to the advanced longliner “Geir II”. In the bow, the vessel is equipped with a Brunvoll Retractable Azimuth Thruster for superb manoeuvrability and back-up propulsion, enabling safer fishing

operations and take-home capability. The unit can also be used as a tunnel thruster in retracted position. The thruster system improves comfort for the crew, because one can stop the main propulsion to reduce noise while using the Retractable Azimuth. The vessel has a patented moon pool system for line hauling, which has been proved to raise catch quality.

2010 “Geir II”

Owner: H. P. Holmeset

Design: Skipsteknisk ST 155

Yard: Fiskerstrand Verft

Bow: Retractable Azimuth Thruster
AR63 LNC 1650 700 kW







2009 "Ronja Atlantic"



2009 "Viktoria Viking"



2012 "Øylaks"



Live Fish Carriers have a key role in aquaculture logistics – precise manoeuvring is a critical factor



Live Fish Carriers have transformed aquaculture, minimizing the use of mobile cages, especially on remote sites. Bow and stern thrusters from Brunvoll increase safe manoeuvrability, which is essential to ensure safe and easy access without risk to the moorings.

“Ro Fjell” is the world’s largest and most advanced Live Fish Carrier.



2013 “Ro Fjell”

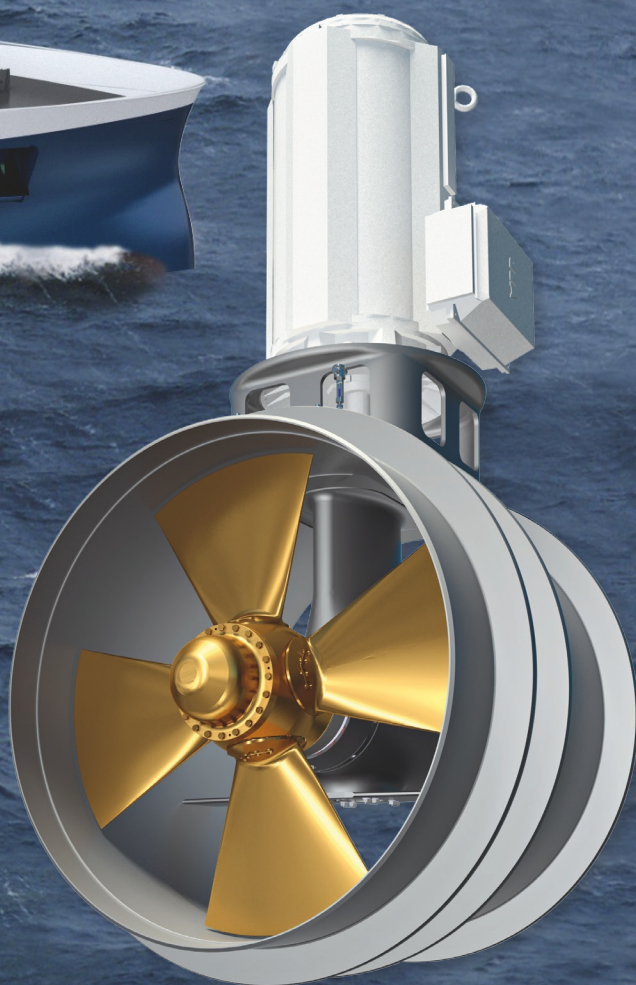
Owner: Rostein-gruppen

Design: Aas 4502ST

Yard: Aas Mek. Verksted

Bow: FU 63 LTC 1550 770 kW

Stern: FU 63 LTC 1550 770 kW



2013 “TBN” – two newbuildings for Bømlo Brønnbåtservice



2009 “Ro Fjord”

RESE

Brunvoll thrust in

The seabed is still less explored than the surface of Mars. It may give us clues to new fuels and medicines. We may find new knowledge of tsunamis and earthquakes. But conducting research in these dark and icy depths is enormously costly and challenging.

Research vessels with advanced technology are unlocking some of the secrets of the ultra-deep oceans. In remote and hostile environments, accurate manoeuvring, reliable performance for long periods at sea, and low-noise operation are key factors.



Research vessels for 40 years

Brunvoll's experience in specialized thruster applications is highly appreciated in this sector.

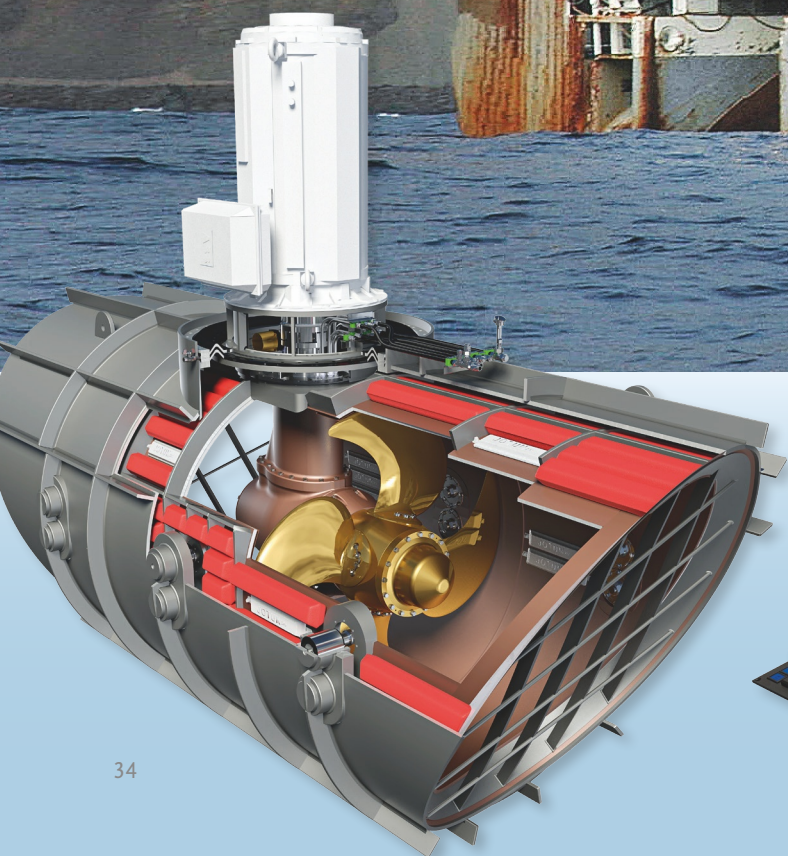
We offer customers our expertise in LowNoise, retractable azimuth and rim-driven thruster systems.

Brunvoll delivers complete thruster systems designed for dependable operation in harsh environments. We develop solutions to new challenges in dialogue with our customers.



Norway's "G.O.Sars" – a research milestone in 2003

Designed for the ultimate in low noise and low vibration, the ship is used by the Institute of Marine Research and the University of Bergen.



2003 "G.O. Sars"

Owner: Institute of Marine Research

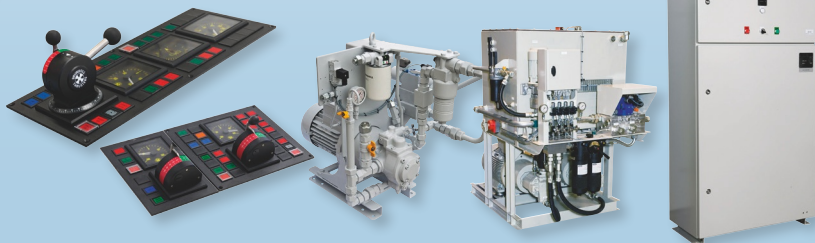
Design: Skipsteknisk

Yard: Flekkefjord Slipp & Maskinfabrikk

Bow: LowNoise Tunnel Thruster FU63 LRC 1750 600 kW

Bow: Retractable Azimuth AR63 LNC 1650 880 kW

Stern: LowNoise Tunnel Thruster FU45 LRC 1375 415 kW





UK's "James Cook" – a new milestone in 2006

The 5000-tonne RRS "James Cook" is one of the world's most advanced research vessels. Managed by the Natural Environment Research Council (NERC), "James Cook" is capable of both continental margin and deep ocean projects in the search for answers about climate change, evolution, ocean circulation and biodiversity. She takes samples from the seabed at depths of up to 8000m.

2006 "James Cook"

Owner: Natural Environment Research Council (NERC)

Design: Skipsteknisk

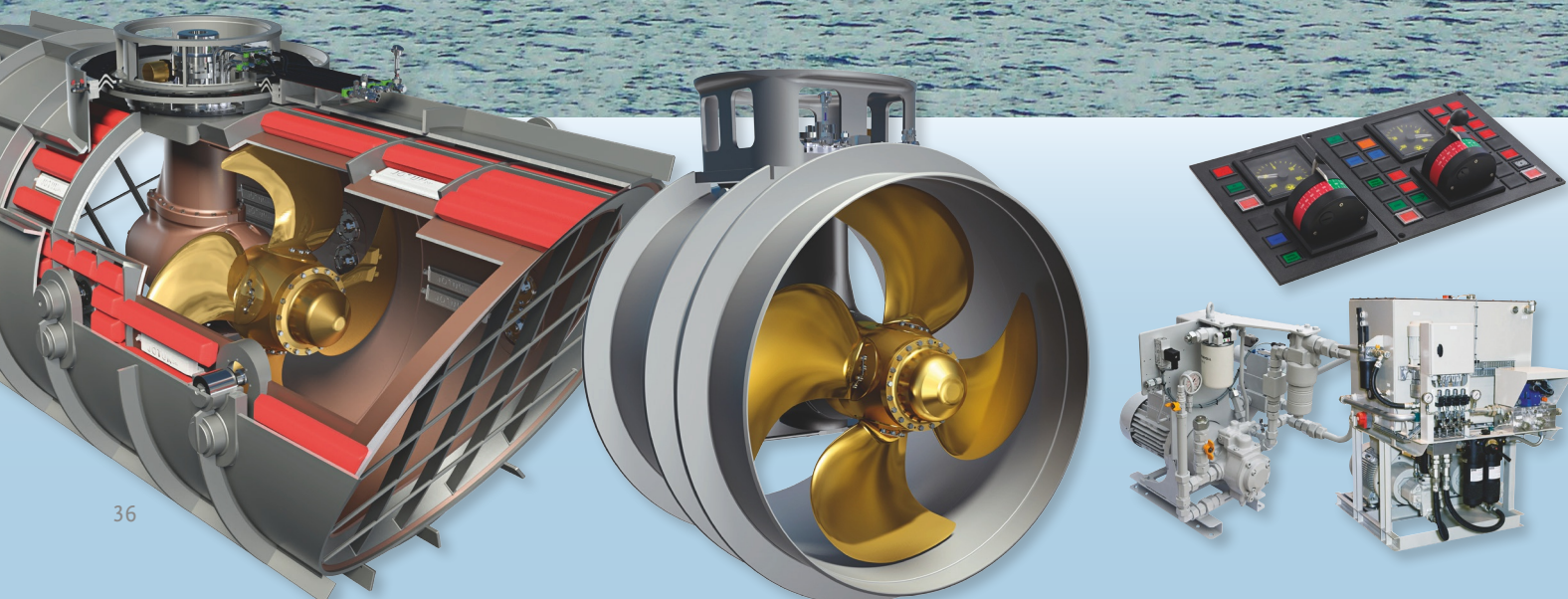
Yard: Flekkefjord Slipp & Maskinfabrikk

Bow: LowNoise Tunnel Thruster FU80 LRC 2250 1,200 kW

Bow: Retractable Azimuth AR80 LNC 2100 1,350 kW

Stern: LowNoise Tunnel Thruster FU63 LRC 1750 800 kW

Stern: Tunnel Thruster FU63 LTC 1750 600 kW





France's Ifremer with Brunvoll Thruster Systems

Exploring the mysteries of the sea is the mission of Ifremer, the renowned French institute for marine research. Ifremer's range of skills and expertise in this field is among the broadest in the world. Advanced equipment is needed to discover and monitor the oceans from surface to seabed. Ifremer chose Brunvoll thrusters for its vessels "Thalassa" and "Pourquoi Pas".

The multi-purpose ship "Pourquoi Pas" equipped for working while moving – capable of hydrographic, geoscientific and biological missions. Adapted for launching the ROV "Victor 6000" as well as the submersible "Nautile", best known for finding and exploring the wreck of the Titanic.





1996 "Thalassa" – This fisheries research vessel is used for missions such as population ecology and assessment of fished species. LowNoise thruster in the bow – conventional thruster in the stern.

Bow: LowNoise Tunnel Thruster FU45 LRC 1375 440 kW

Stern: Tunnel Thruster FU37 LTC 1000 265 kW

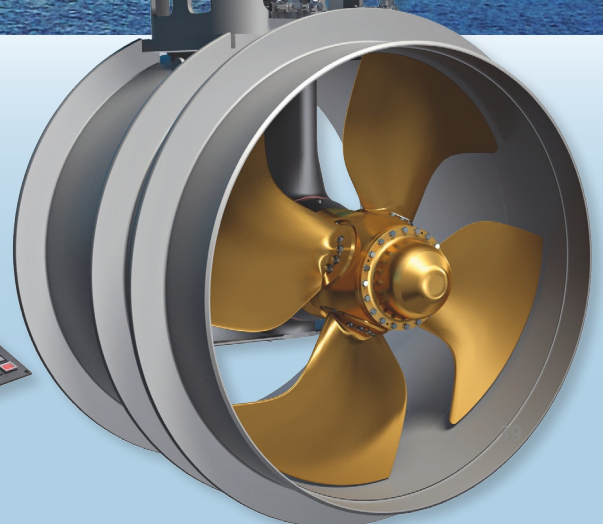
2005 "Pourquoi Pas ?"

Owner: Ifremer and the French Ministry of Defence

Yard: Alstom Leroux

Bow: 3x FU63 LTC 1750 735 kW

Stern: FU63 LTC 1750 735 kW



Denmark's new Fishery Patrol Vessel with Brunvoll Rim Driven Thrusters

This advanced Fishery Patrol Vessel is built for the Danish Directorate of Fisheries – with two Rim Driven Thrusters for the ultimate in low-noise performance.



Qatar University's Research Vessel "Janan" with Brunvoll thrusters

The multi-purpose research vessel "Janan" with dynamic positioning needed two thrusters – but the space aft was very limited. The solution was a rim-driven thruster from Brunvoll in the stern combined with a tunnel thruster in the bow. The space-saving RDT offered the LowNoise performance needed.

2010 "Janan"

Owner: Qatar University

Yard: Freire

Bow: FU37 LTC 1000 250 kW

Stern: Rim-Driven Thruster

RDT 1000 200 kW





2012 "Nordsøen"
Yard: Astilleros M. Cies
Bow: RDT 1000 300 Kw
Stern: RDT 800 160 Kw



1972/2010 RV “Tangaroa”, upgraded with DP2 dynamic positioning and Brunvoll thrusters in 2010, is New Zealand’s largest research vessel. New Zealand’s only ice-strengthened research ship. Well-equipped for a wide range of environmental survey and ocean science work, including fisheries surveys. Works throughout the South Pacific, Southern Ocean, and Antarctica.

Owner: National Institute of Water and Atmospheric Research (NIWA)
 Bow: FU63 LTC 1550 600 kW
 Retractable Azimuth Thruster AR63 LNC 1650 880 kW
 Stern: FU63 LTC 1750 800 kW



2005 Scotland FPV “Jura” – Scottish fishery protection vessel.

Bow: Retractable Azimuth Thruster
 AR63 LTC 1750 500 kW
 Stern: FU45 LTC 1225 350 kW



1996 “European Supporter” (“Oceanic Viking”). This vessel was chartered to patrol Sub-Antarctic waters for the Australian Customs and Border Protection Services and the Australian Fisheries Manager Authority. In 2010 she returned to service as a seismic vessel.

Owner: Eidesvik Shipping
 Bow: FU80 LTC 2000 1200 kW
 2 x Retractable Azimuth Thruster AR63 LNC 1650 880 kW
 Stern: 2 x FU63 LTC 1750 730 kW



2002 "Beautemps-Beaupré" (A758)

Built for the French Naval Hydrographic and Oceanographic Service, named after the hydrographer Charles-François Beautemps-Beaupré.

Bow: LowNoise Thruster FU 45 LRC 1375 440 kW

Stern: 2 x FU 37 LTC 1000 225 kW



1972/1985 RV "Southern Surveyor". Australia's national vessel dedicated to marine research in oceanography, climatology, fisheries, and ecosystems in the world's largest offshore jurisdiction. Brunvoll thrusters were installed during a refit in 1985, and have been running for more than a quarter of a century. The vessel is operated by CSIRO, the Commonwealth Scientific and Industrial Research Organisation.

Bow: 2 x SPX VP 440 kW

Retractable Azimuth Thruster AR55 LNC 1600 575 kW

Stern: 2 X SPX VP 440 kW



1998 FRV "Scotia" – Scottish Executive Environment and Rural Affairs Department, Fisheries Research Services.

Yard: Ferguson Shipbuilders Ltd of Port Glasgow

Design: Skipsteknisk

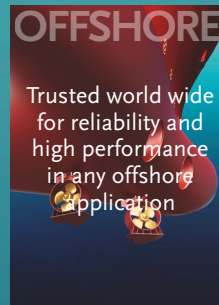
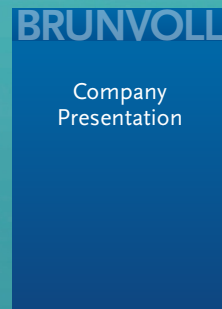
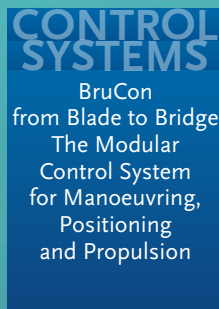
Stern: FU45 LTC 1375 380 kW



Brunvoll information resources are available in the publications shown here.

Please contact us if you would like to receive any of our brochures.

You are also welcome to read or download them as PDF files at www.brunvoll.no



BRUNVOLL AS
Strandgata 4-6, NO-6415 Molde, Norway
Phone +47 71 21 96 00. Telefax +47 71 21 96 90
E-mail office@brunvoll.no
www.brunvoll.no